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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,494	05/10/2005	Andrew C. Lewin	1241116	4705

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NIXON & VANDERHYE, PC  
901 NORTH GLEBE ROAD, 11TH FLOOR  
ARLINGTON, VA 22203

EXAMINER

LUU, THANH X

ART UNIT	PAPER NUMBER
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2878

MAIL DATE	DELIVERY MODE
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01/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/534,494

Applicant(s)

LEWIN ET AL.

Examiner

Thanh X. Luu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This Office Action is in response a pre-appeal conference request filed November 26, 2007. Pursuant the conference, prosecution has been reopened.

Claims 1-9 and 11-15 are currently pending.

#### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the array of LEDs and the illumination means adapted to project a plurality of spots at different modulated frequencies and the mask adapted such that at each range of distance a different modulated frequency is transmitted to the detector must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 7, 9 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Heisner (U.S. Patent 3,786,238).

4. Regarding claims 1-3, 7, 9 and 13, Heisner discloses (see Figs. 2-4) a proximity sensor comprising: an illumination means (32, 22) for illuminating a scene with an array of spots of light, a detector (LS-1 - LS-5) arranged to receive light reflected from the scene and a mask (RH), located in the optical path of light from the scene to the detector, the mask having transmissive portions (at the apertures) and non-transmissive portions (at places other than the apertures) and being arranged, together with the illumination means and detector such that light reflected from a target from within a first range of distances from the sensor is transmitted through the mask to the detector and light from a second range of distances is not transmitted through the mask, wherein the illumination means comprises a light source (32) arranged to illuminate part of the input face of a light guide (fibers 22), the light guide comprising a tube having substantially reflective sides and being arranged together with projection optics (end face of fiber;

see claim 5) so as to project an array of distinct images of the light source towards the scene. The detector is capable of compensating for ambient light as claimed (see col. 4, lines 1-6).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heisner in view of Geary et al. (U.S. Patent 4,020,327).

7. Regarding claims 8, 14 and 15, Heisner discloses the claimed invention as set forth above. Heisner do not disclose LEDs or an array of LEDs. Geary et al. teach (see Figs.) a similar device in which an array of LEDs are used. As understood, the illumination means having an array of LEDs may be adapted and the mask may be adapted as claimed. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an LED or an array of LEDs in the apparatus of Heisner in view of Geary et al. to provide a more efficient and long lasting light source as known.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heisner in view of Shi et al. (U.S. Patent 6,949,758).

9. Regarding claim 5, Heisner discloses the claimed invention as set forth above. Heisner do not disclose a frequency specific filter as claimed. Shi et al. teach (col. 6,

lines 36-42) a similar device in which an array of LEDs are used. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a frequency specific filter and light source in the apparatus of Heisner in view of Shi et al. to reduce interference and improve detection as taught.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heisner in view of Hajduk et al. (U.S. Patent 6,732,574).

11. Regarding claim 4, Heisner discloses the claimed invention as set forth above. Heisner do not disclose an IR light source as claimed. Hajduk et al. teach (col. 9, lines 16-20) a device in which an IR light source is used. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an IR light source in the apparatus of Heisner in view of Hajduk et al. to reduce interference and improve detection as taught.

12. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heisner in view of Li (U.S. Patent 6,926,435).

13. Regarding claim 12, Heisner discloses the claimed invention as set forth above. Heisner do not disclose a hollow tube as claimed. Li teaches (col. 7, lines 7-12) that optical fibers are equivalent to hollow tubes having reflective sides. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an IR light source in the apparatus of Heisner in view of Li as desired to provide a more resilient device.

14. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Heisner in view of Nothofer et al. (U.S. Patent 5,878,180).

15. Regarding claim 11, Heisner discloses the claimed invention as set forth above. Heisner do not disclose a square cross section as claimed. Nothofer et al. teach (col. 1, lines 49-55) that optical fibers with square cross sections are known and advantageous. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use square cross section fibers in the apparatus of Heisner in view of Nothofer et al. to provide higher packing density as taught.

### ***Response to Arguments***

16. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thanh X Luu/  
Primary Examiner  
Art Unit 2878

01/2008